IN THE CLAIMS:

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

1. (currently amended) Imaging method for nuclear magnetic resonance, comprising applying a constant static magnetic field upon a sample, applying an additional magnetic field superimposed on the static magnetic field, the additional field having, in at least one grating surface within the sample volume, different field strength values at each point of the grating surface, exciting the sample with a high-frequency electromagnetic alternating field, and reading and evaluating electromagnetic radiation emitted from the excited sample to generate images, and wherein the additional field is described by surface-filling or space-filling curves, there being a biunique correlation between field strength values and point of the grating for these curves.

2. (previously presented) Imaging method for nuclear magnetic resonance according to claim 1, wherein a one-dimensional Fourier transformation is used.

3. (cancelled).

4. (previously presented) Imaging method for nuclear magnetic resonance according to claim 1, wherein several areas of the sample are measured at the same time.

5. (previously presented) Imaging method for nuclear magnetic resonance according to claim 1, wherein echoes are generated.

6. (previously presented) Imaging method for nuclear magnetic resonance according to claim 5, wherein the additional field changes its sign over time for generating the echo.

7. (previously presented) Imaging method for nuclear magnetic resonance according to claim 1, wherein the additional field is described by a Hilbert curve.

8. (previously presented) Imaging method for nuclear magnetic resonance, comprising generating a spatially detectable transversal magnetization signal in a sample, reading the signal along a fractal space-filling trajectory during a data acquisition phase, forming a raw-data matrix

and determining an image from the raw-data matrix by means of Fourier transformation.

9. (previously presented) Imaging method for nuclear magnetic resonance according to claim 8, wherein the fractal space-filling trajectory is described by a Hilbert curve.

10. (previously presented) Imaging method for nuclear magnetic resonance according to claim 8, wherein the data acquisition takes place in segments.

11. (previously presented) Imaging method for nuclear magnetic resonance according to claim 8, wherein an image coding takes place in three dimensions.

12. (previously presented) Imaging method for nuclear magnetic resonance according to claim 8, wherein parts of a measuring set-up are moved past the sample or through the sample or segments of the magnetic field(s) are activated successively.

13. (currently amended) Device for executing the method according to claim 1, comprising a constant static magnetic field acting on a sample, means for generating an

additional field that is superimposed upon the static magnetic field and that has, in at least one grating surface within the sample volume, different field strength values at each point of the grating surface, means for generating a high-frequency electromagnetic alternating field whereby the sample is excited, means for reading out the electromagnetic radiation emitted by the excited sample, and means for evaluation and image generation, means for generating a spatially detectable transversal magnetization in a sample, means for data acquisition of a signal along a fractal space-filling trajectory, means for data evaluation forming a raw-data matrix from the acquired data and obtaining an image from the raw-data matrix by means of Fourier transformation.

14. (original) Device according to claim 13, wherein the means for generating an additional field comprise a micro coil arrangement.

15. (previously presented) Device for executing the method according to claim 8, comprising means for generating a spatially detectable transversal magnetization in a sample, means for data acquisition of a signal along a fractal space-filling trajectory, means for data evaluation

forming a raw-data matrix from the acquired data and obtaining an image from the raw-data matrix by means of Fourier transformation.

16.(new) Imaging method for nuclear magnetic resonance, comprising applying a constant static magnetic field upon a sample, applying an additional magnetic field superimposed on the static magnetic field, the additional field having, in at least one grating surface within the sample volume, different field strength values at each point of the grating surface, the additional field being described by a Hilbert curve, exciting the sample with a high-frequency electromagnetic alternating field, and reading and evaluating electromagnetic radiation emitted from the excited sample to generate images.